

Health Care Trends

Clem Bezold, Institute for Alternative Futures

National Organization of Nurse Practitioner Faculties

April 11, 2013



Today's Topics

▶ **Futures Thinking**

- Trends, Forecasts, Scenarios & Vision

▶ **Key Trends Shaping Health Care**

- In the Macroenvironment
- Within health care, especially disruptive innovations

Futures for Nurse Practitioners

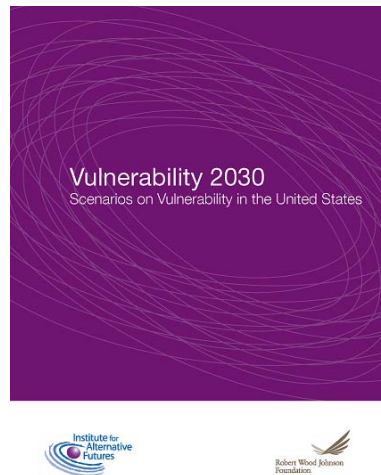
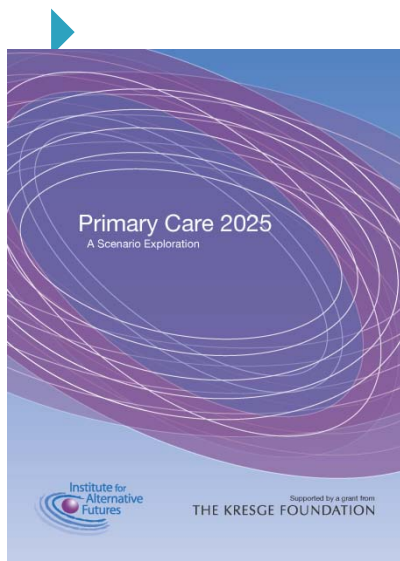
- ▶ **All health professionals should graduate with a sense of the likely futures for their field over one professional lifetime (e.g. 20 to 40 years); as well as the ability to anticipate**
- ▶ **I encourage you to include this capacity and the relevant scenarios in your curricula**

Futures for Nurse Practitioners

- ▶ **NPs and the Nursing Field have done significant work on their preferred futures. Those preferred futures should be developed into explicit scenarios, along with other likely futures and presented to your students.**

Futures for Nurse Practitioners

- ▶ **Today I'll talk about Key Trends shaping health care. We have done other scenario sets that are relevant for you to consider**



Futures Thinking: you are a Futurist!

How much change in last 20 years?

More or less change in next 20 years?

What Might Happen?

- Trends

- Forecasts

- Scenarios

What you prefer, what you want to happen

- Values

- Vision

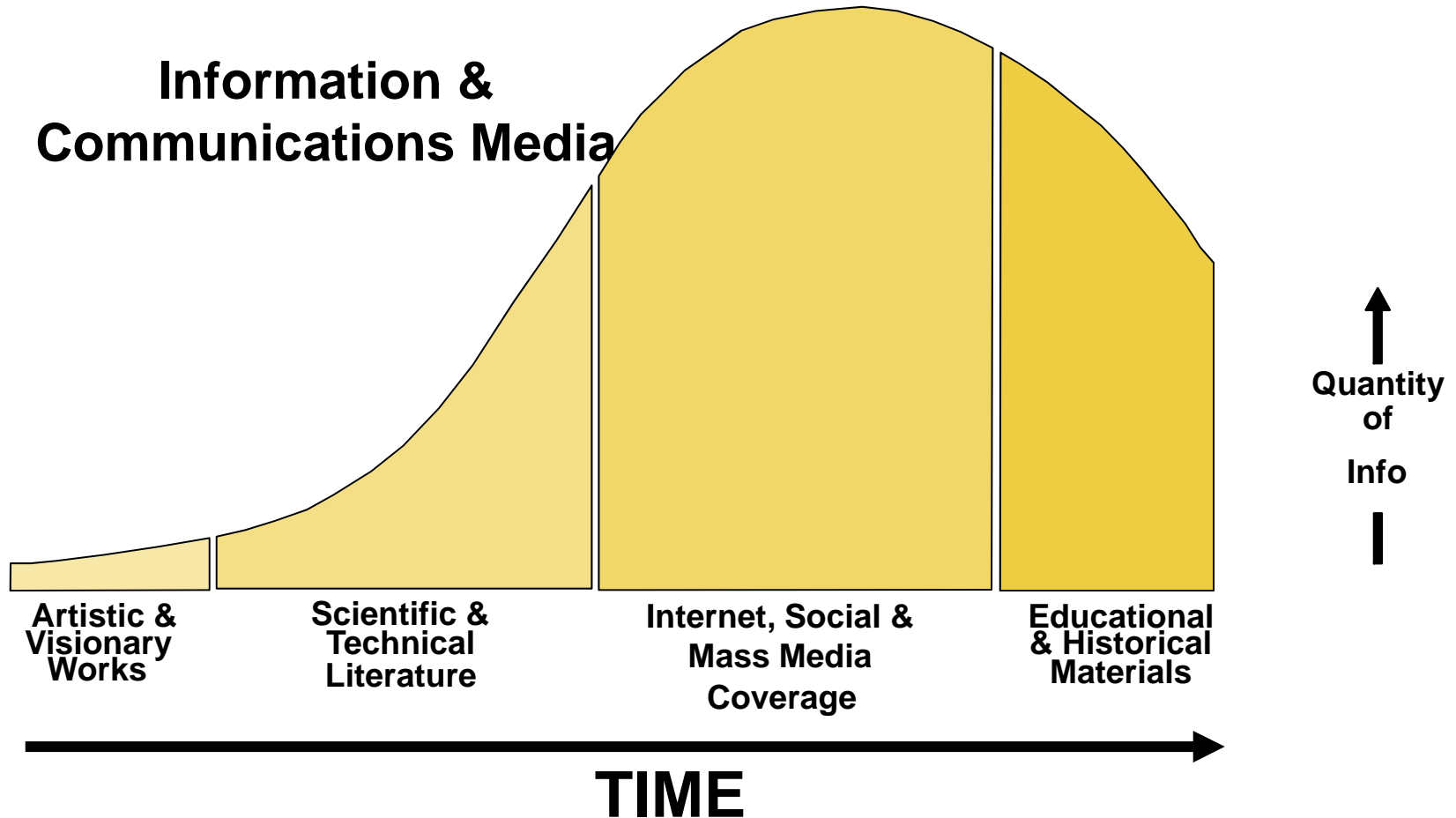
- Goals

Futures Thinking: you are a Futurist!

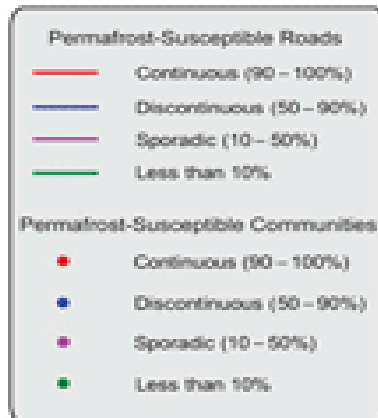
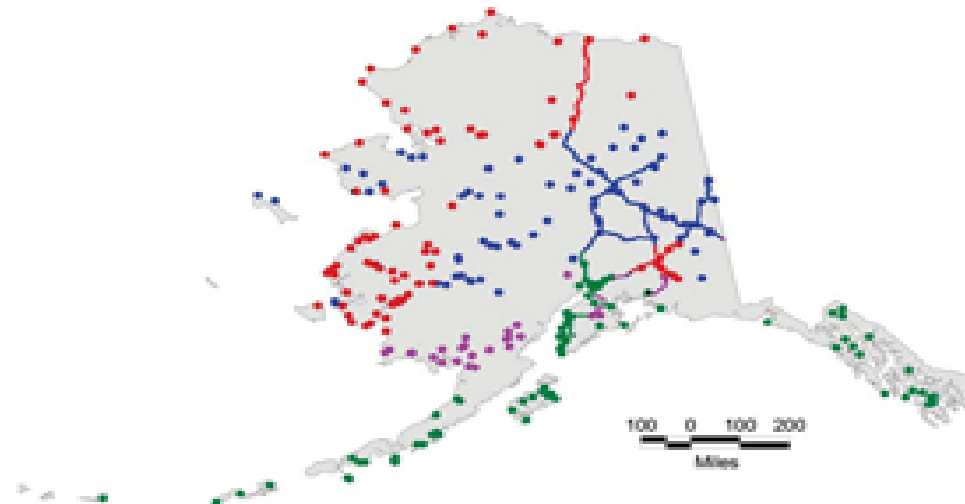
Trends & Environmental Scanning

Trends & Environmental Scanning

Search for Emerging Developments



Climate Change: Alaska & Permafrost



Summary of Alaska Highways Susceptible to Permafrost

Permafrost Extent	Road Distance (mi)
Continuous (90 – 100%)	456
Discontinuous (50 – 90%)	1,211
Sporadic (10 – 50%)	189
Less than 10%	281

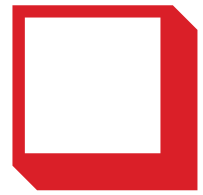
Summary of Alaska Communities Susceptible to Permafrost

Permafrost Extent	Total Communities	Population
Continuous (90 – 100%)	87	40,811
Discontinuous (50 – 90%)	79	47,140
Sporadic (10 – 50%)	26	5,235
Less than 10%	129	396,821

- ▶ Alaska highways susceptible to permafrost.

Source: [U.S. Arctic Research Commission \(2003\)](#)

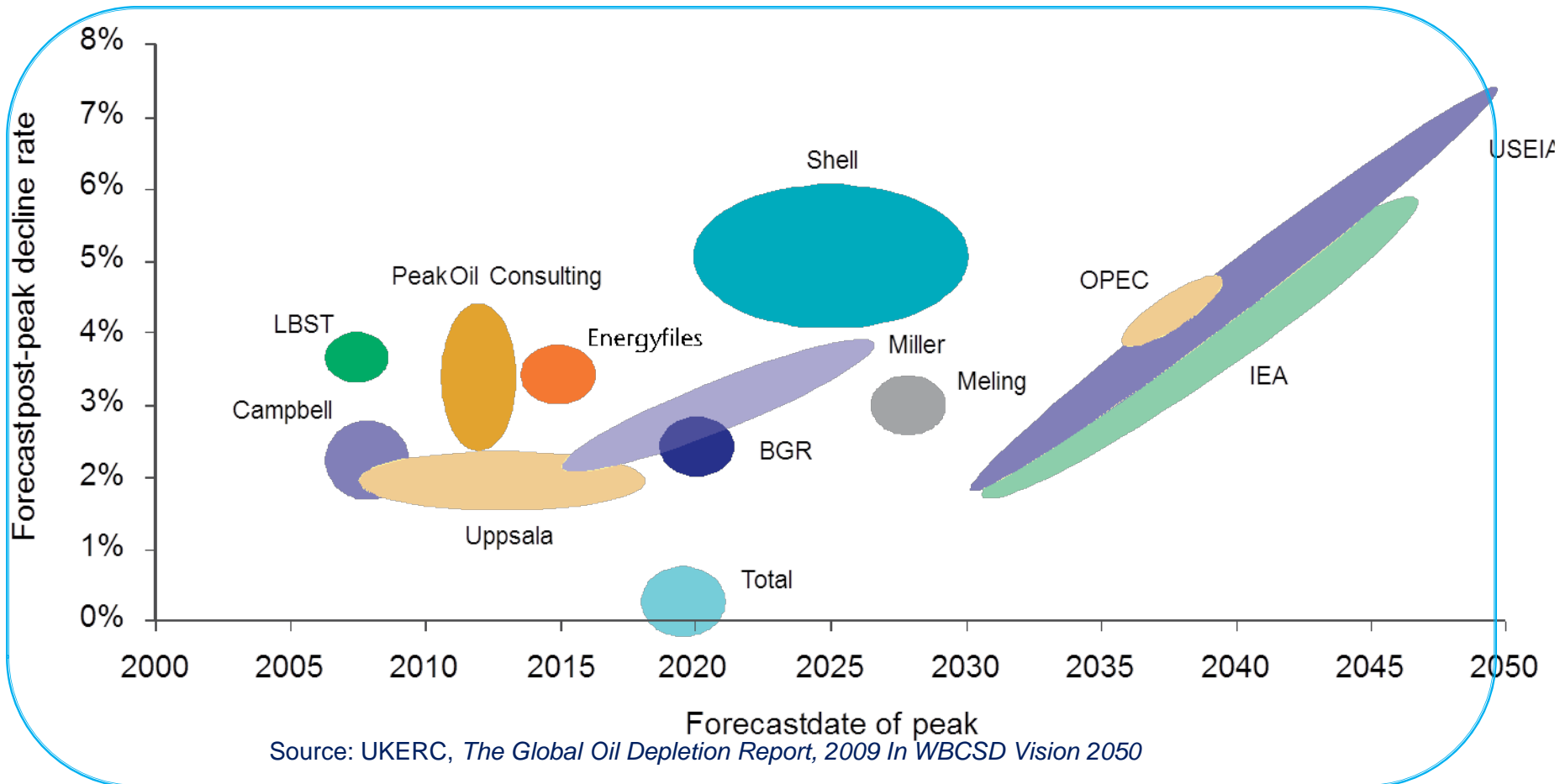
Futures Thinking: you are a Futurist!



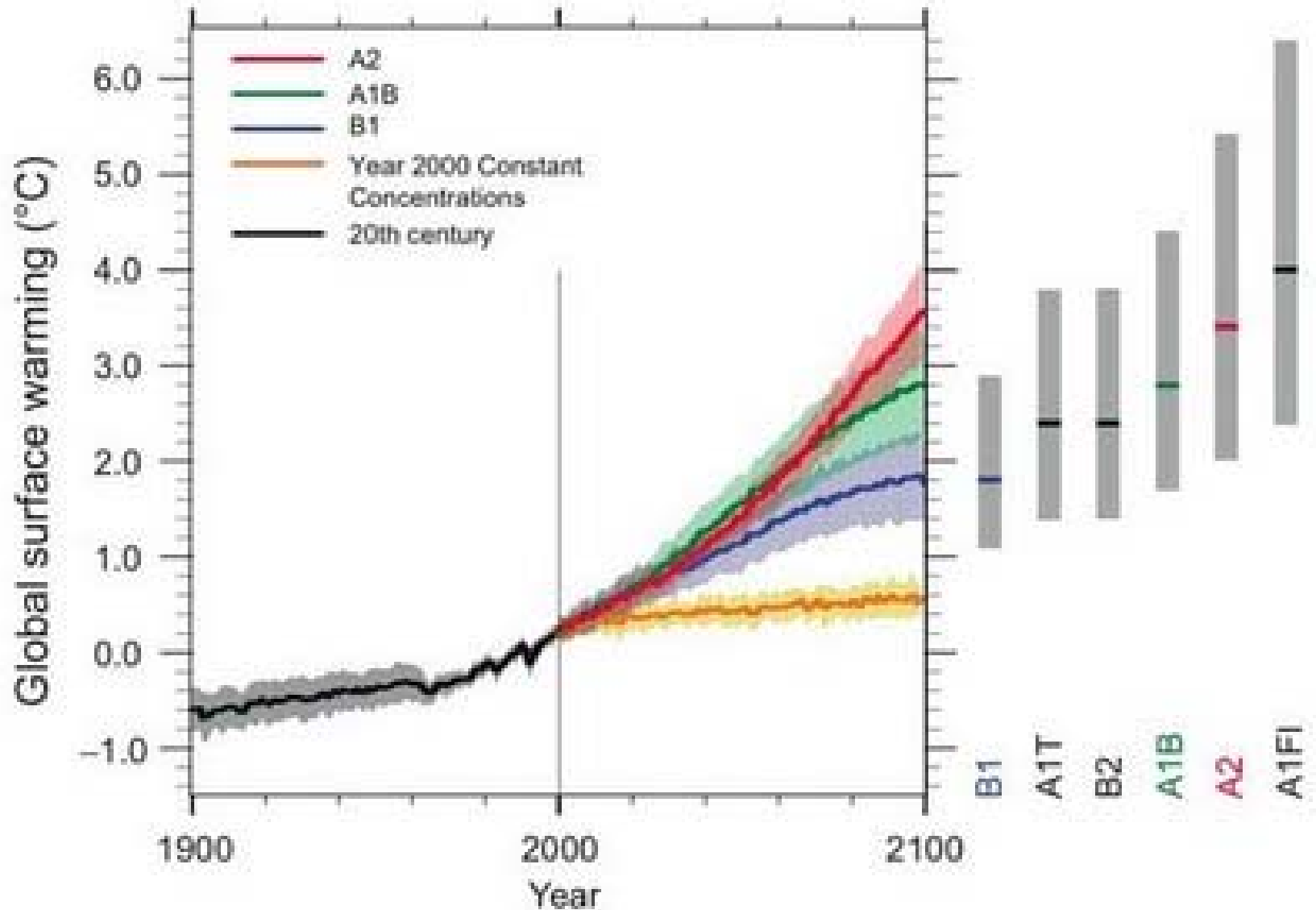
Forecasts

Peak Oil Or Not???

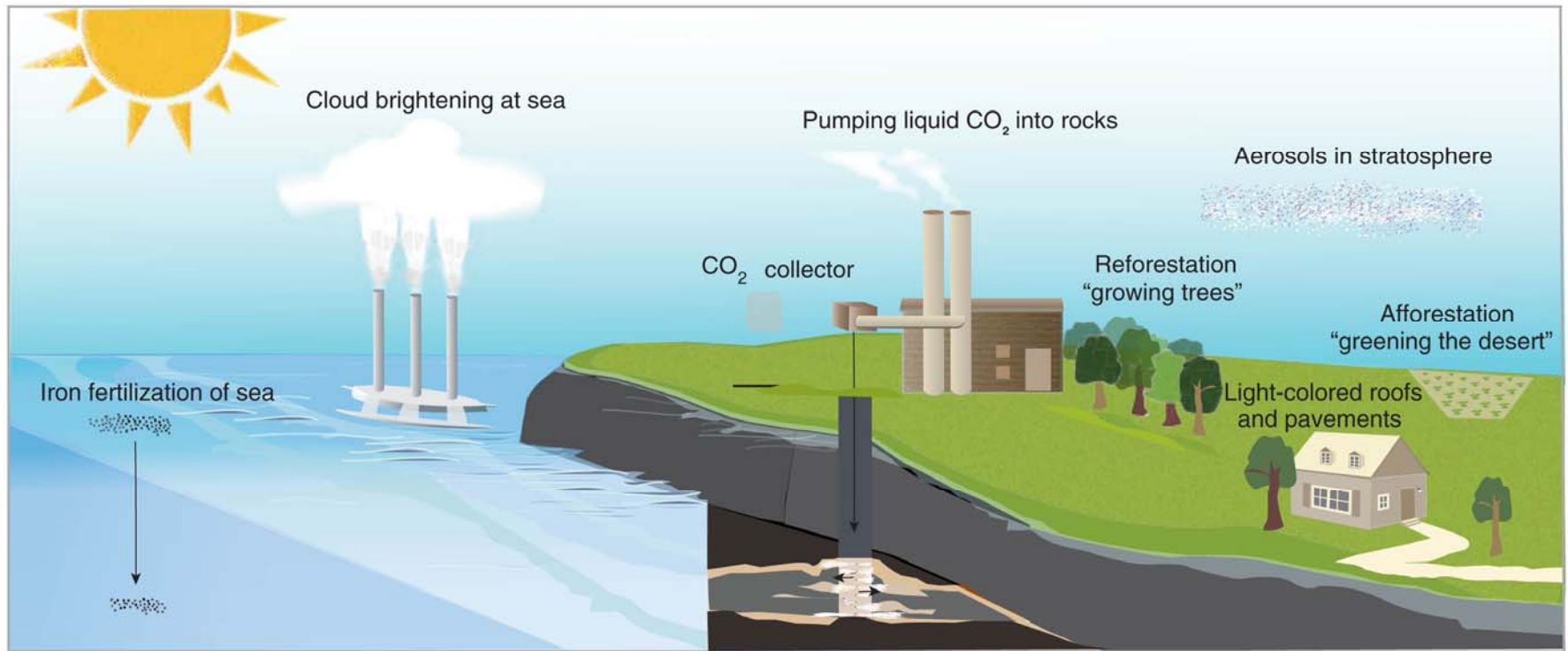
Global supply forecasts according to the implied ultimate recoverable resources of conventional oil, date of peak production and the post-peak aggregate decline rate as of 2009; Yet by 2012 new sources and expanded recovery, including fracking, appear to extend Peak Oil out 20 to 30 years.



Data Modeling of Global Warming

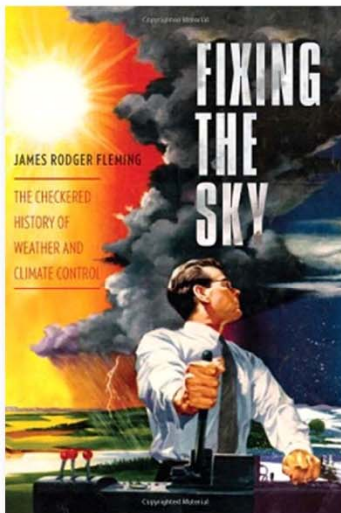


Qualitative Scenarios to Inform Decisions: Climate Engineering Research



Climate Engineering: Past and Present

Past



RESTORING THE QUALITY
OF
OUR ENVIRONMENT

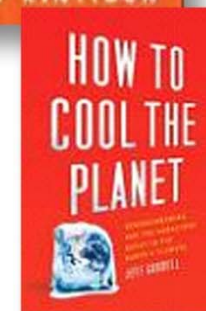


Report of The
Environmental Pollution Panel
President's Science Advisory Committee

The climatic changes that may be produced by the increased CO₂ content could be deleterious from the point of view of human beings.

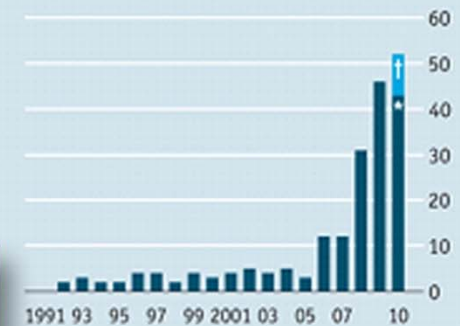
The possibilities of deliberately bringing about countervailing climatic changes therefore need to be thoroughly explored.

Present



The tinkers awaken

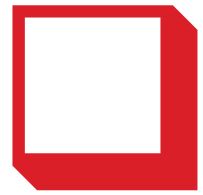
Number of research papers on geoengineering published per year



Source: Thomson Reuters
Web of Science database

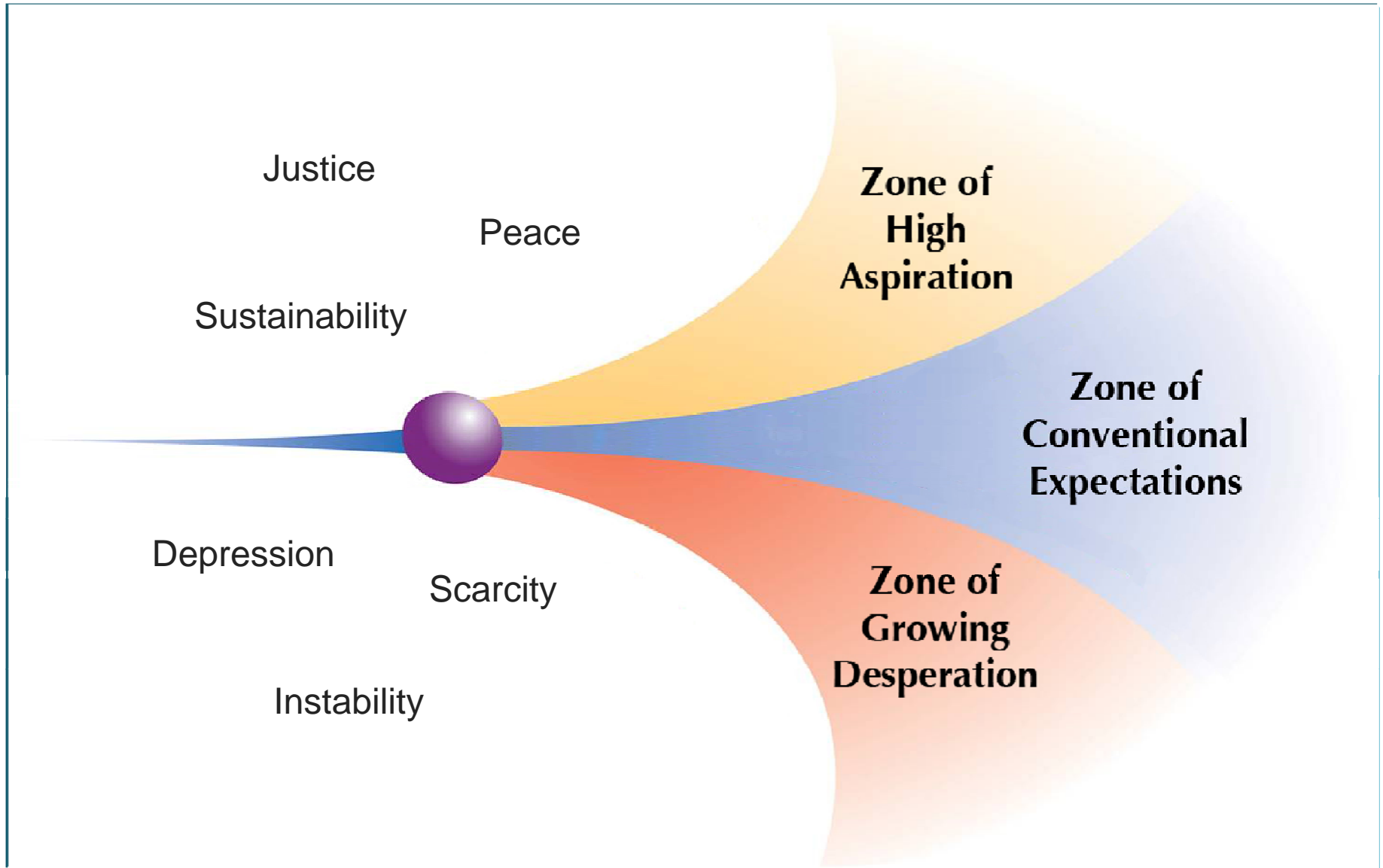
*To end October
†Forecast

Futures Thinking: you are a Futurist!



Scenarios

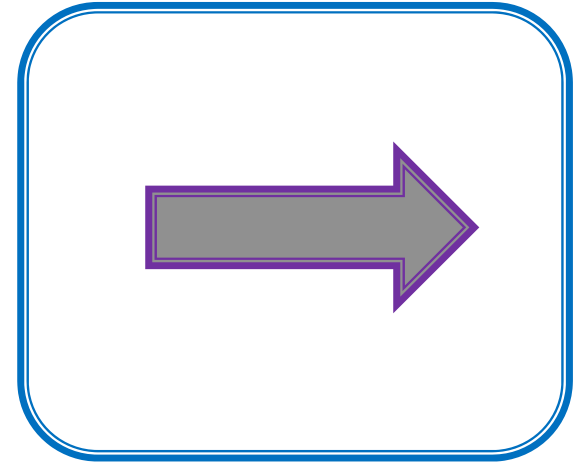
Scenario Zones



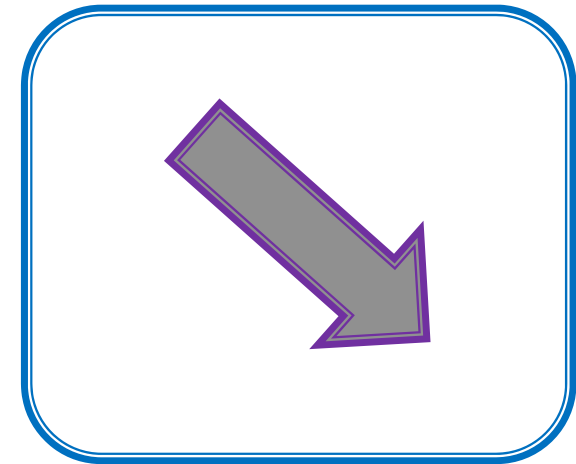


Scenario Archetypes

- ▶ Expectable/Most Likely (Alpha)



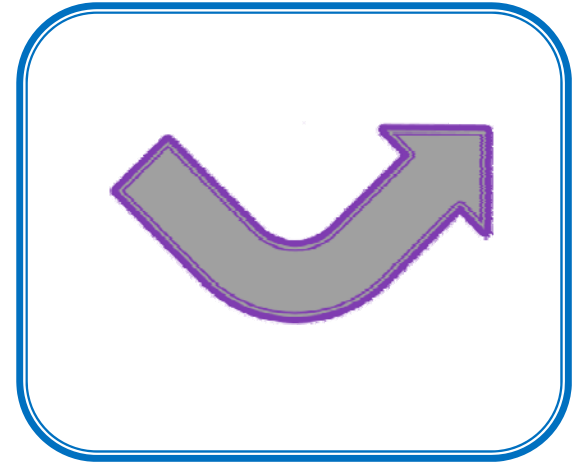
- ▶ Challenge/Hard Times (Beta)



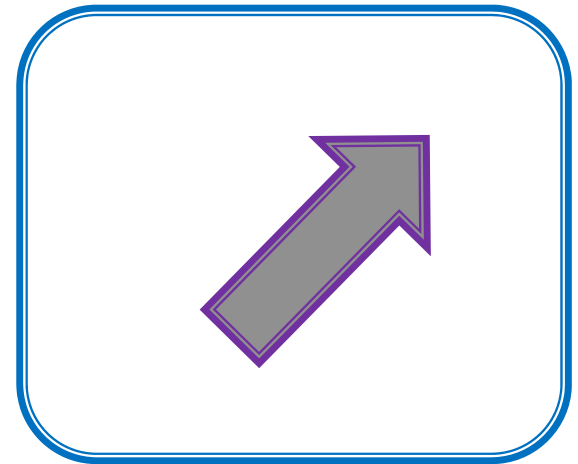


Scenario Archetypes, cont.

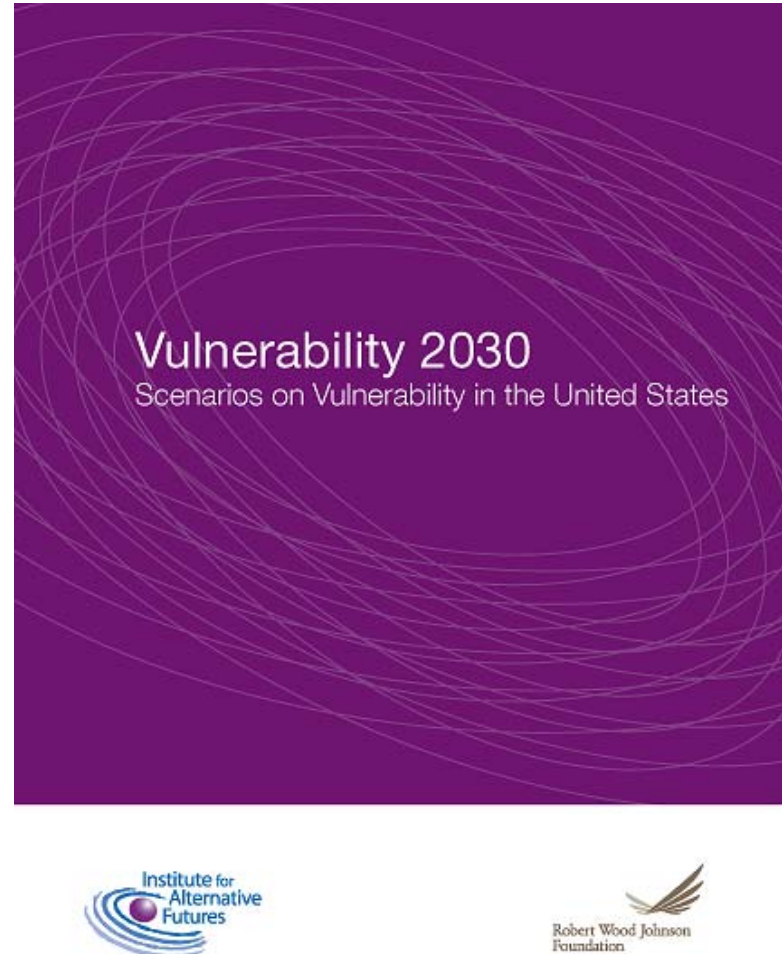
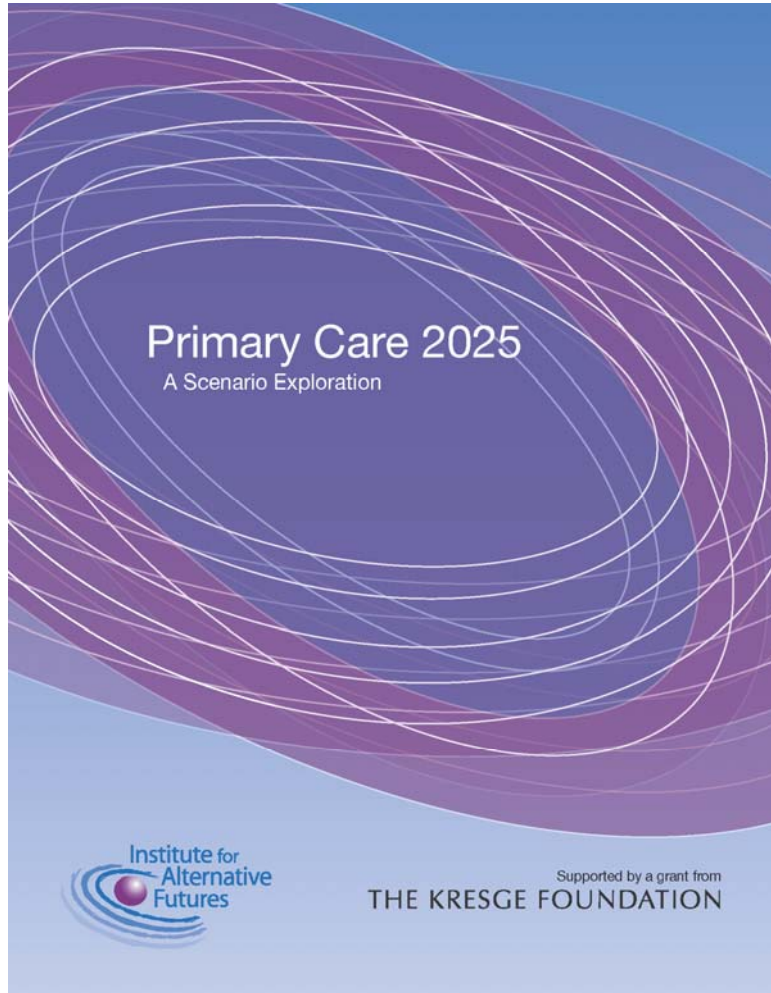
- ▶ Visionary (Delta)



- ▶ Visionary (Delta)



Two IAF Scenario Reports

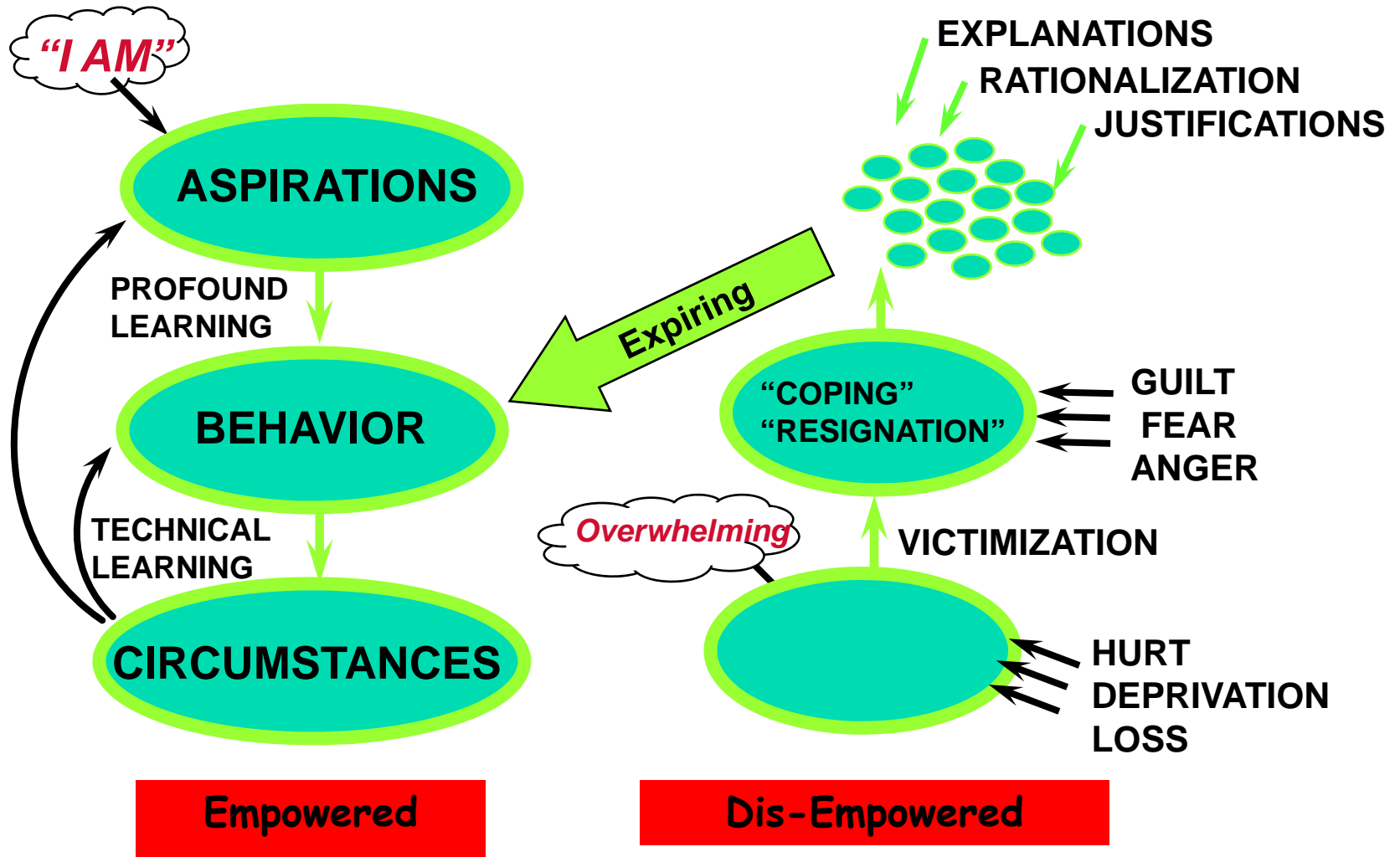


Futures Thinking: you are a Futurist!

Vision

Creating preferred futures, driven by your aspirations

Aspirations Model



Trends

Key Trends Shaping Health Care

- ▶ In the Macroenvironment
- ▶ Within health care, especially disruptive innovations

Key Trends in the Macroenvironment Shaping Health Care

- Recession or Recovery?
- Federal Debt & Deficits
- Internet, Social Media, Virtual Reality
- Transparency, Empowered Consumers
- Aging

Key Trends in Health Care

- Unsustainable health care costs
- Health reform (implementing ACA, or not)
- Pressure for cuts in Medicare and Medicaid payments

Key Trends: Disruptive Innovations

Disruptive Innovations

Transformation will be accelerated by Disruptive Innovations

Some characteristics of disruptive innovations:

- **Technological Enabler** – purpose is to simplify
- **Business Model Innovation** – profitably deliver simplified solutions in affordable and convenient ways
- **Value Network** – commercial infrastructure of companies with disruptive, reinforcing economic models
- **Starts off the Radar Screen**

Clayton Christensen, Jerome Grossman & Jason Hwang, *The Innovator's Prescription: A Disruptive Solution for Health Care*, McGraw Hill, 2009

Disruptive Innovations

Business Model Innovations

- ▶ Quality - Triple Aim
- ▶ The Home Team – PCMH to CCHH
- ▶ Integrated, bundled payments
- ▶ Medical tourism (home & abroad)
- ▶ Transparency of costs
- ▶ Retail clinics



Emerging Technologies

- ▶ Personalized medicine & care
- ▶ EMR & PHR
- ▶ Digital coach/navigator
- ▶ Care in virtual space



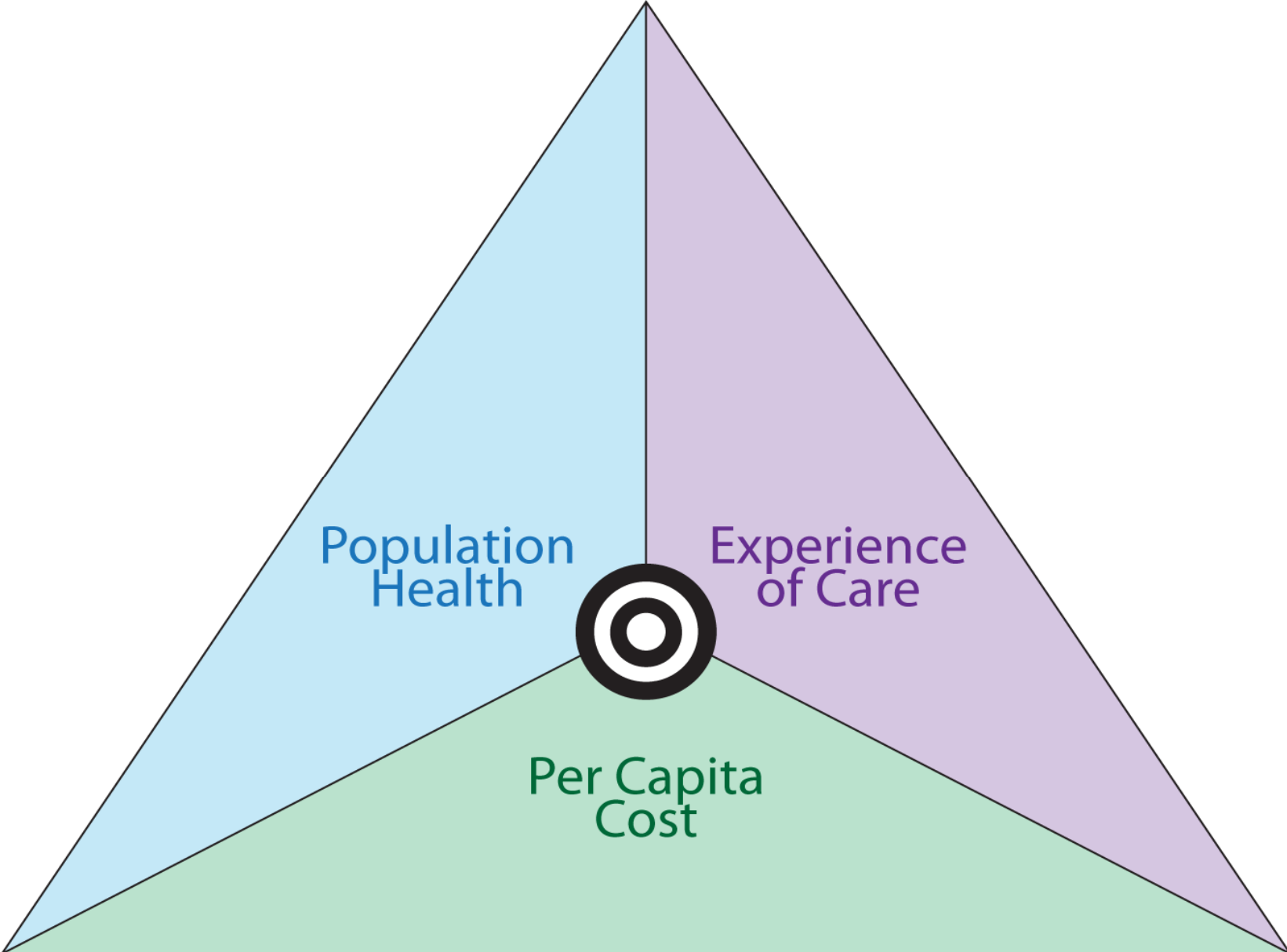
Health Care Quality is Evolving



The IOM 6 AIMS



The Triple Aim

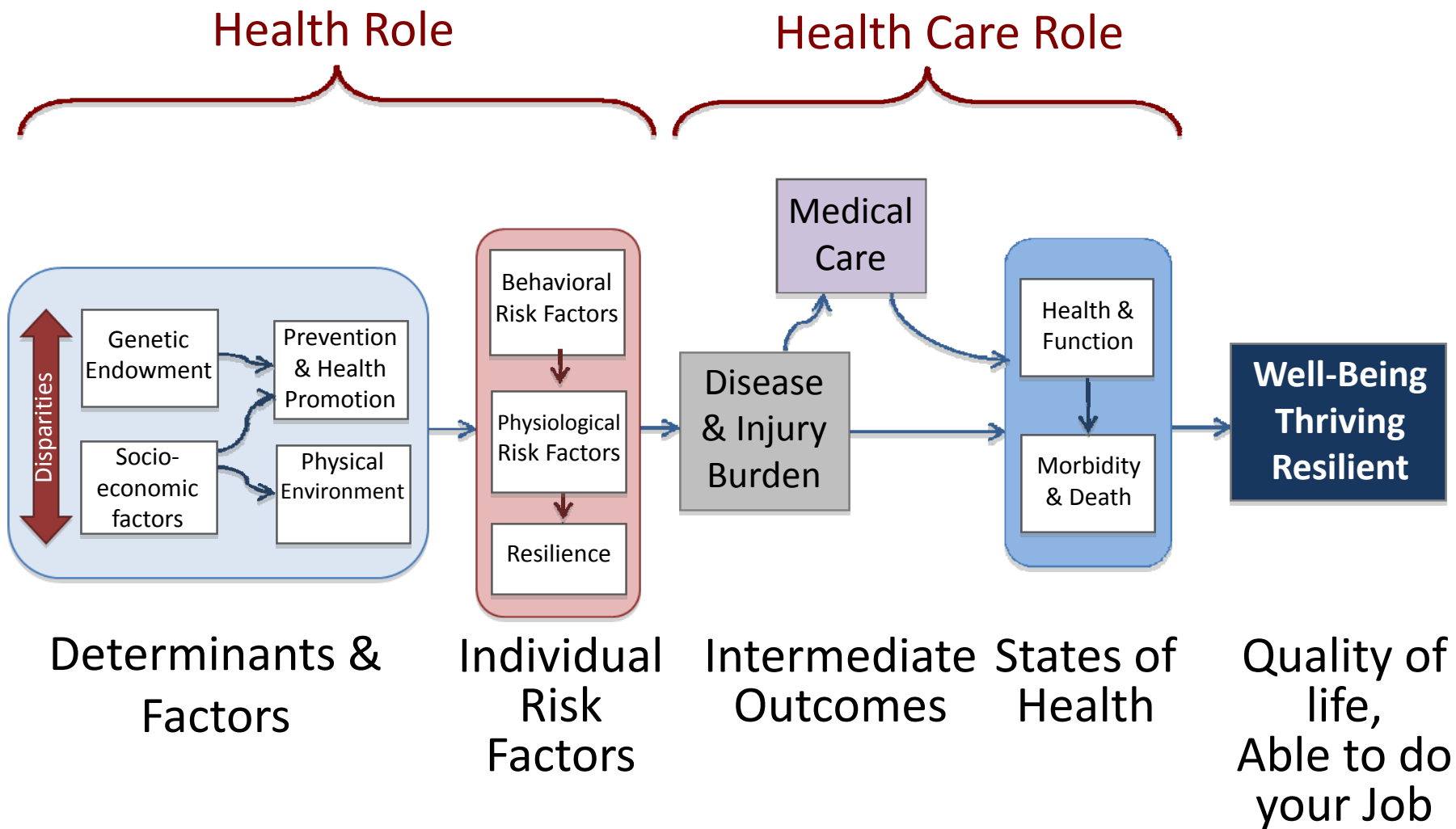


Major Factors Shaping Health

	M1993	M2002	HPC	CHR
Behavior	50%	40%		30%
Socioeconomic conditions			50%	40%
Environment	20%			10%
Social		15%		
Physical		5%	10%	
Genes	20%	30%	15%	
Healthcare	10%	10%	25%	20%

Source: 1993 – M = McGinnis and Foege, JAMA, 1993, 270, 2207-2212; 2002 - McGinnis, Russo, Knickman, 2002, Health Affairs, 21,3,83; HPC – “Healthy, Productive Canada, Final Report of the Senate Subcommittee on Population Health. June 2009; CHR = County Health Rankings, 2010 www.countyhealthrankings.org/

Broad View of Population Health



The Home Team – from Patient Centered Medical Home (PCMH) to Community Centered Health Home (CCHH)

The Home Team – PCMH

The patient-centered medical home (PCMH) is a centerpiece in defining primary care. Its features include:

- Enhanced access to care
- Care continuity
- Practice-based team care
- Comprehensive care
- Coordinated care
- Population management
- Patient self-management
- Health IT
- Evidence-based
- Care plans
- Patient-centered care
- Shared decision-making
- Cultural competency
- Quality measurement and improvement
- Patient feedback
- New payment systems

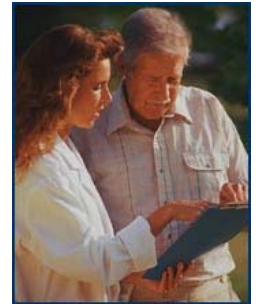
Source: Four Primary Care Physician Organizations cited in Robert Berenson, Kelly Devers, Rachel Burton, "Will the Patient Centered Medical Home Transform the Delivery of Care?" August 2011, The Urban Institute.

The Home Team – PCMH

Life-long
continuity
of care



Coordination
of care



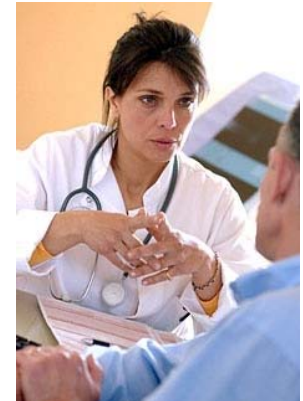
Electronic
record



Shared
decision-
making



Education
and
coaching



Collaborative
team of
providers



Who's on the Team

- ▶ **Health care personnel and teams – all practicing at top of licenses**
- ▶ **MD/DOs; NPs, PAs; DCs, DPTs; RNs; PharmDs, Behavioral; MAs and CHWs**
Incl. Community Health Workers going into homes with the intelligence and caring of the system



The Home Team – from Patient Centered Medical Home (PCMH) to Community Centered Health Home (CCHH)

Community Centered Health Home = PCMH plus:

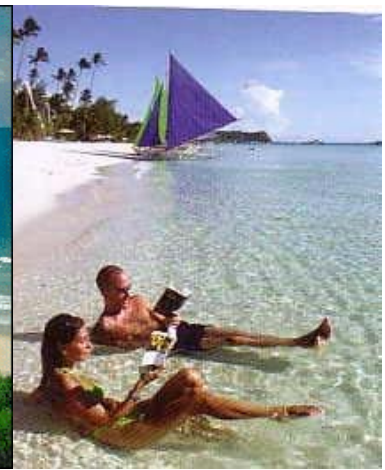
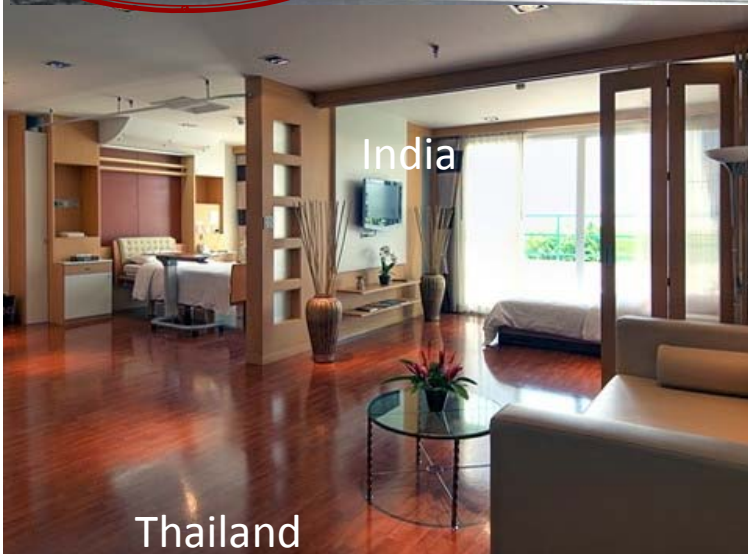
- ▶ Work with community partners to collect data on social, economic, and community conditions
- ▶ Aggregate health and safety data; systematically review health and safety trends
- ▶ Identify priorities and strategies with community partners and coordinate activity
- ▶ Act as community health advocates
- ▶ Mobilize patient populations
- ▶ Strengthen partnerships with local health care organizations and establish model organizational practices

Medical tourism (home & abroad)



Medical Tourism

Your insurance company waives deductibles & co-pays plus covers travel costs for you and your family if you have your heart surgery overseas



Medical tourism (home & abroad)

	U.S.	Singapore	Thailand	India
Angioplasty	\$57,000	\$13,000	\$13,000	\$11,000
Coronary Bypass	\$130,000	\$18,500	\$11,000	\$10,000
Valve Replacement	\$160,000	\$12,500	\$10,000	\$9,000
Hip Replacement	\$43,000	\$12,000	\$12,000	\$9,000
Knee Replacement	\$40,000	\$13,000	\$10,000	\$8,500
Spinal Fusion	\$62,000	\$9,000	\$7,000	\$5,500
Hysterectomy	\$20,000	\$6,000	\$4,500	\$3,000

Source: BusinessWeek 3/24/08, p 36; Data: Thai Public Health Ministry



1.5 million medical tourists visited Thailand last year alone, with growth expected to hit 2 million by 2010

Competing with Low Cost Surgery

Hannaford Bros offers employees hip and knee joint replacement surgery in Singapore.



- A Boston hospital asks to compete
- Surgery costs \$9,000 in Singapore, \$43,000 in U.S.
- How do you reduce costs by 75%?

Integrated Payments

- ACOs will share risk, integrate payments with systems, moving toward capitation.

Payments – Bundled

One fee for entire episode of care



Bundle design important for correct outcome.

“Develop a single payment for selected treatments such as cardiac bypass graft that covers related services before, during and after surgery”

Who manages bundle and how is it allocated?

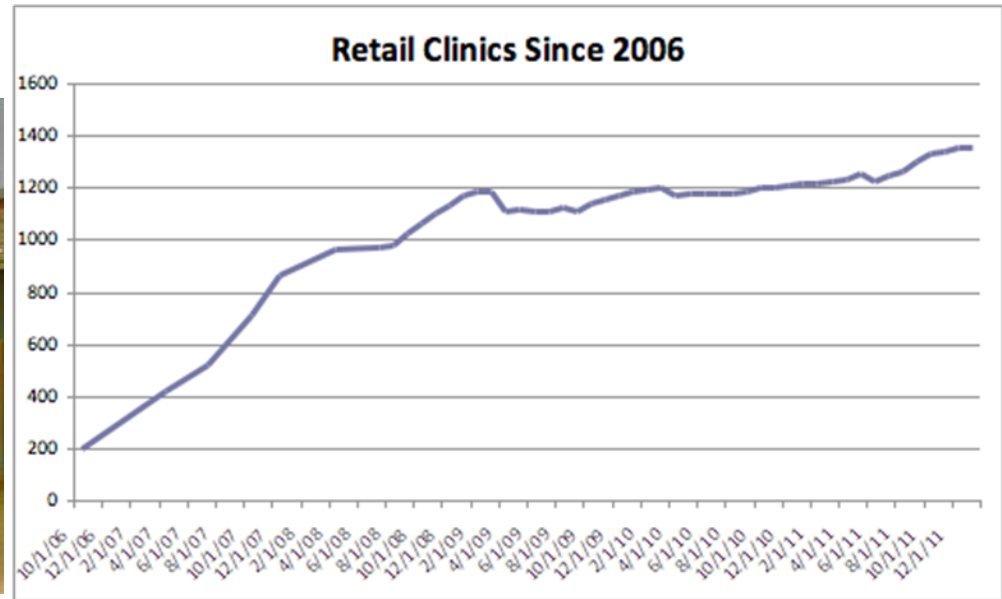
Success requires collaborations, good processes

Health Cost Transparency

- Consumers, Payers & Providers will know:
 - How much it costs
 - How much health care providers get
- Comparative Effectiveness of Therapies, Providers & Technologies
- Regions: Grand Junction, CO vs. McAllen, TX; Minnesota vs. Florida or Hawaii vs. New Jersey
- Angie's List, Jill's List, PatientsLikeMe.

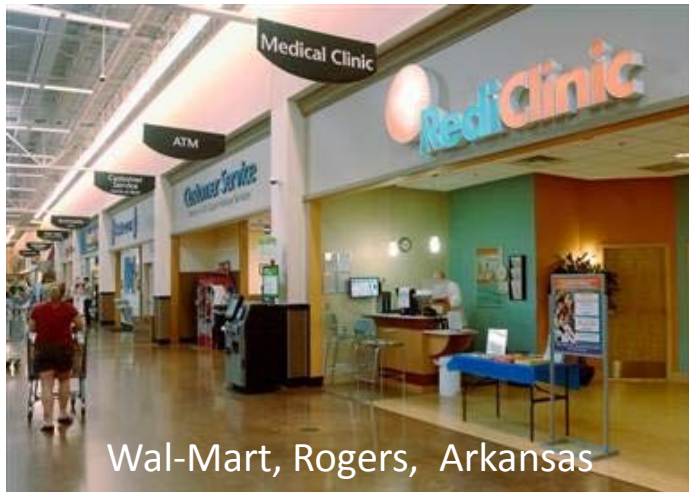


Retail Clinics



- No appointment, out in 15 minutes
- Satisfaction rating 4.9 out of 5
- Nurse practitioner – 40% savings
- Could treat 100 common conditions
- Competing against non-consumption

Retail & other clinics



Wal-Mart alone has 130 in-store retail health clinics

Walgreen's new Health and Wellness division: 700 worksite health and wellness centers and in-store convenient care clinics
CVS – 630 in pharmacies
Target – 56 in stores



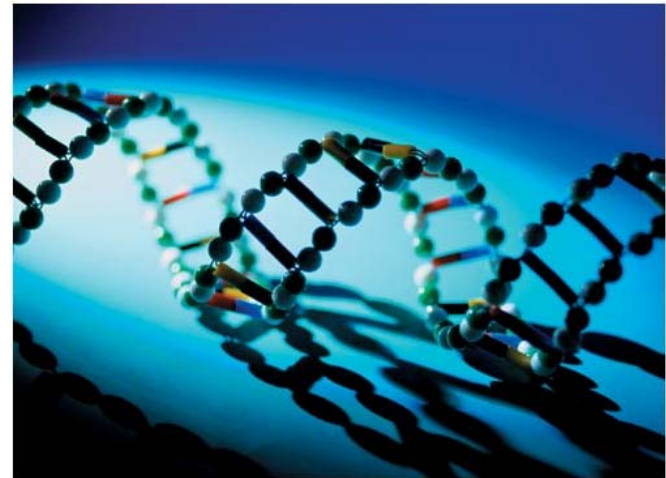
Shopping Malls now have medical spas that do cosmetic procedures



Disruptive Emerging Technologies

Personalized Medicine and Care

- ▶ Genomics, Biomonitoring
 - Epigenetics, Zipcodeomics
- ▶ Personalized definitions of “normal” and disease
- ▶ Massive data on treatments & side effects analyzed and results used for personalized prescriptions for individuals



Health Care Knowledge Advances



Electronic Medical Records



“Dr. Watson” Expert Support for providers



Digital Health Coach (“avatar”)



Personalized Vital Signs



Digital health agents, gaming, social networking



Electronic Medical Records



PracticeFusion

Dr. Jones & Associates Jun 10, 2007

Home Patients Claims Calendar

Appointments for Dr. Ely Jones Sunday, Jun 10, 2007

Room	Appointment	Checked In	In Treatment	Patient Name	Type of Visit	Reason of Visit
Exam Room A	08:15 am	07:55 am	08:05 am	Cooper, Sharon	Follow up	Cholesterol
Exam Room B	08:30 am	08:35 am	08:45 am	Green, Daniel	New Problem	Ear Pain
Exam Room C	09:30 am	09:35 am		Craft, Nicole	New Problem	Cough
Exam Room C	09:30 am	09:35 am		Craft, Mariah	New Problem	Cough

Review Chart Start Visit

Current View

Current Workload Schedule

Demographics Reminders Current Problems Allergies Medications Vitals

Name Sharon Cooper
Age 25
Sex FEMALE
Marital Status Married
Referring Provider Dr. Jacob Pelly
Insurance Blue Cross of California PPO #21233333

Visits Messages Preferences

Done Internet 100%



Vehicle - Monthly Fixtures

Vehicle - Wellness, Physical Therapist (Logout)

Operations - Search - Reports - Configuration - Specialty - Data - Help - Tab Sets - Full Screen

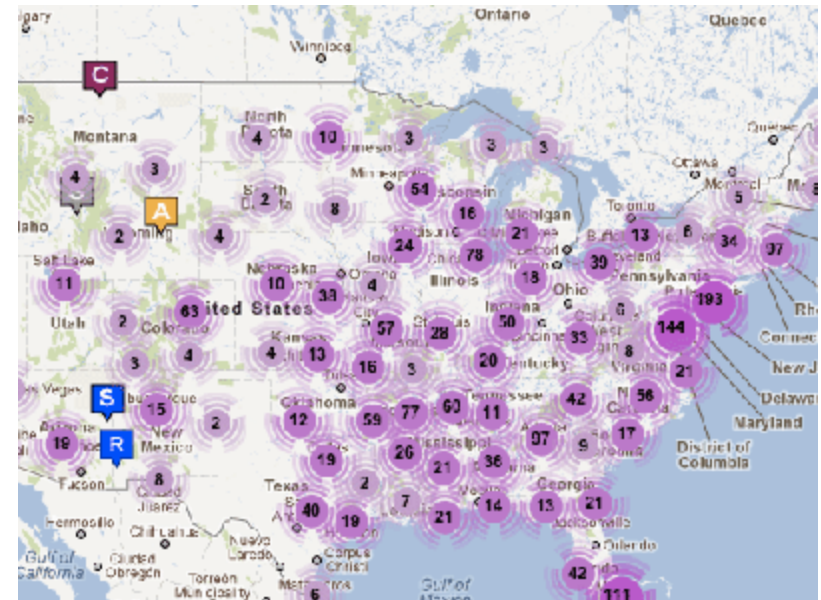
OPER. PRIMARY BILLING	# VISITS	# CAR.	# CDS	# ONES	NET BILL	DISP.	INC. ADJUSTED	PROVIDED	% INC.	% CLAY	% AUB.	ALUM.	DISP.	INC. ADJUST.	BUNCE
97110 AETNA HEALTH	35	44	44	71	5,382.28	118	181.46								
97110 BC BS OF NEW YORK	56	58	58	85	6,321.75	0	0.00								
97110 BCBS NY	29	29	29	29	1,702.01	0	0.00								
97110 AETNA HEALTH	14	10	10	10	1,417.40	0	0.00								
97110 BCBS - FEDERAL	1	1	1	1	74.00	129	1,000.00								
97110 A.C.I	1	1	1	2	149.20	46	70.00								
97110 MEDICARE NY	1	1	1	1	74.00	88	36.00								
97110 PRIVATE PAY	6	7	7	14	626.02	105	1,136.46								



Health Care Knowledge Advances

► Personalization

- Biomonitoring
- Genomics, epigenetics, zipcodeomics

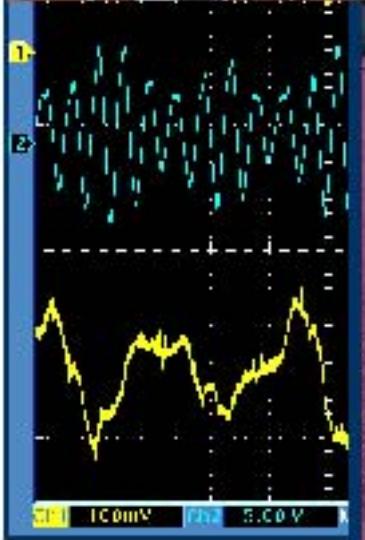




Passive Vital Sign Bed Monitor

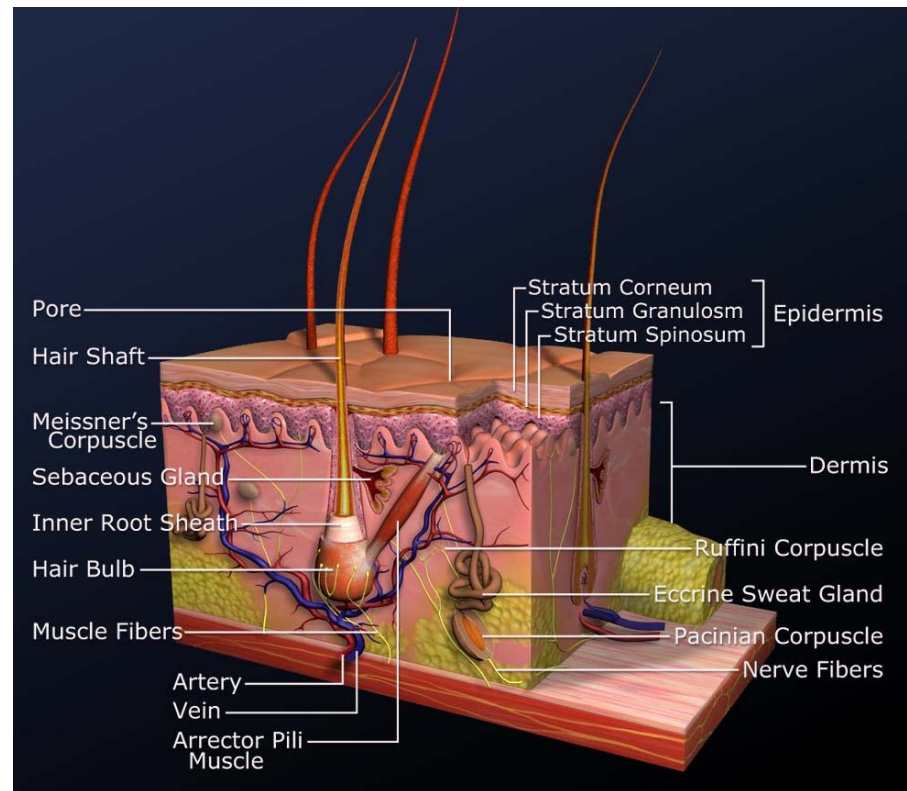
Mattress pad to measure:

- Sleep quality
- Pulse (and HRV)
- Breathing
- Movement/ restlessness
- Bed exit
- Subject position/ turning
- Body temperature
- *Exploring* measuring BP



Biomonitoring through the skin

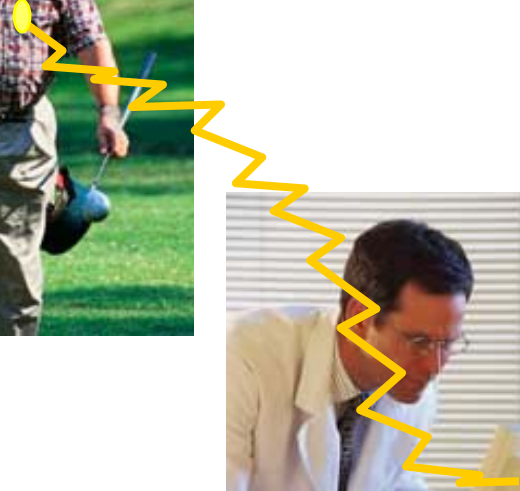
- A microsensor painlessly and continuously extracts biological samples
- Biological samples that can be analyzed for over 200 biomarkers



- A wearable, unobtrusive bandage
- Improved comfort = greatly improved compliance
- Molecular epidemiology



Biomonitoring



The Home & the Doctor's Office



Digital Health Coach Aided By Technology

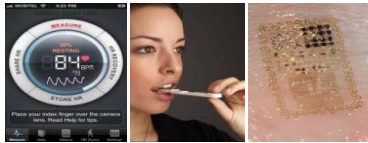


Wellness & disease mgmt. apps



Digital coach ("avatar")

Big name vendors offer free avatar-based health coaching if other integrated health products and services are purchased



Noninvasive biomonitors



Personal health record

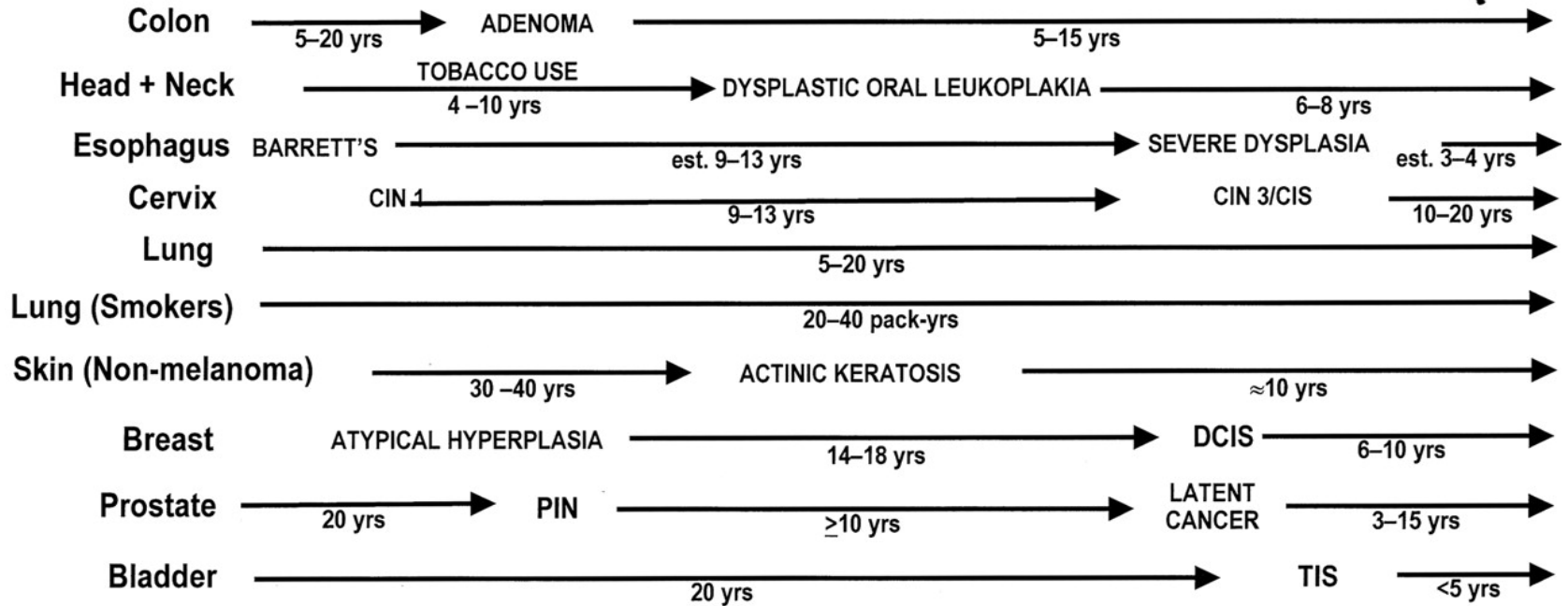
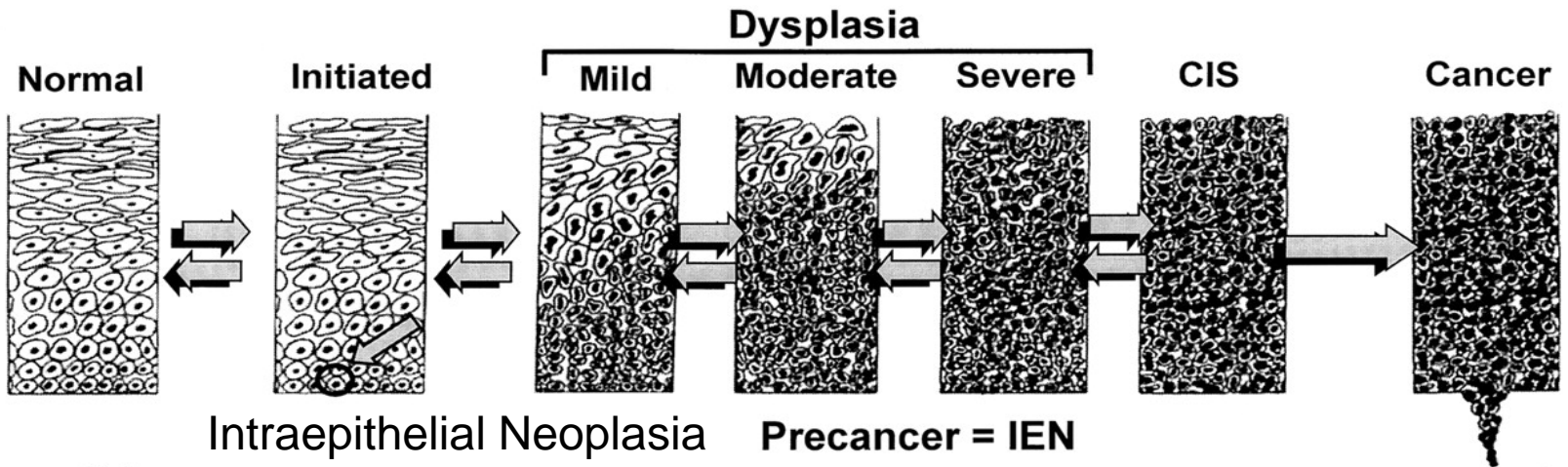


Facilitated Disease Network

Early Detection of Precancer: Intraepithelial Neoplasia

Cancer will have biomarkers that allow early detection, prevention and better treatment - Intraepithelial Neoplasia (IEN) is a major candidate.

O'Shaughnessy, et.al. "Treatment and Prevention of Intraepithelial Neoplasia: An Important Target for Accelerated New Agent Development – Recommendations of the American Association for Cancer Research Task Force on Treatment and Prevention of Intraepithelial Neoplasia", *Clinical Cancer Research* Vol.8, 314-356, February 2002, p.315.



Self-Care



Biomonitoring devices



Digital health coach

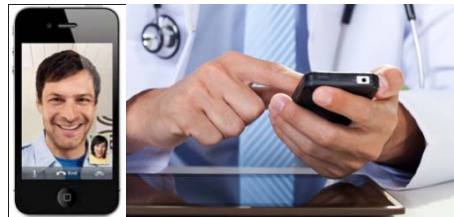


Facilitated disease network



Personal health record

Wellness & disease management apps



Telemedicine

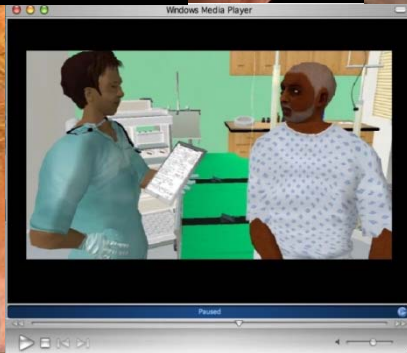
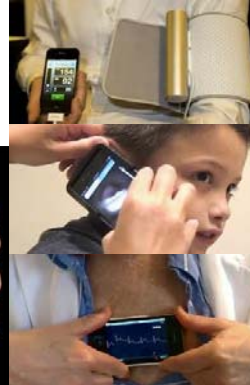
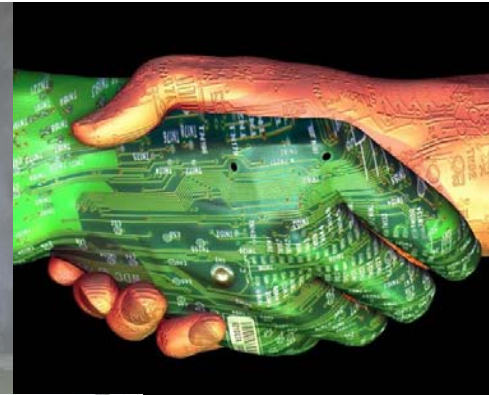


Home dialysis

Angie's List, Jill's List for choosing providers

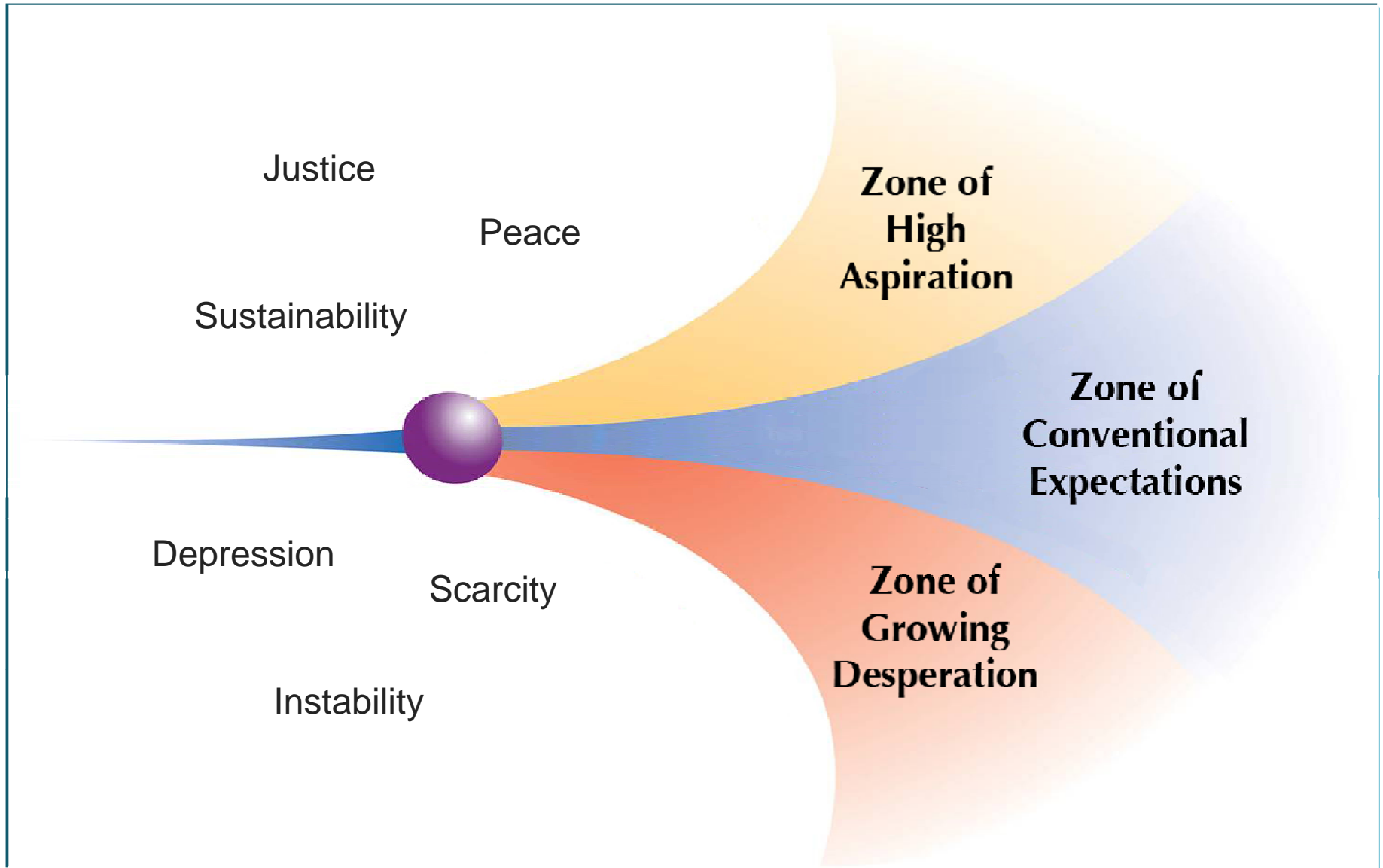
Bring care continuum to patient's home

Virtual Care



Patient ↔ Personal digital health advocate ↔ Providers

From Trends to Scenarios





Primary Care 2025 Scenarios

1. Many Needs, Many Models
2. Lost Decade, Lost Health
3. Primary Care that Works for All
4. I Am My Own Medical Home

www.altfutures.org/primarycare2025

Thank You!

For more information, visit

www.altfutures.org